

REMARKS

Claims 1-21, 23-41, 45-47, and 49-55 are now pending in the application. Claims 22, 42-44 and 48 are herein canceled. Claims 49-55 are withdrawn. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the present amendments and remarks contained herein.

ELECTION/RESTRICTIONS

The Examiner noted restriction to one of two inventions is required under 35 U.S.C. §121. Per the Examiner, invention I includes Claims 1-48, drawn to contact studs, cap nuts, contact systems, classified in class 439, subclass 92, and invention II includes Claims 49-55, drawn to a method of fastening a contact, classified in class 29. Applicant affirms election of invention I, including Claims 1-48, with traverse. Applicant notes Claims 22, 42-44 and 48 are herein canceled.

The Examiner is respectfully requested to reconsider his restriction requirement with respect to Claims 49-55 because it is believed that it would not produce a serious burden upon the Examiner to maintain these two groups of claims. (See MPEP §803.)

REJECTION UNDER 35 U.S.C. § 103

Claims 1-12, 42 and 43

Claims 1-12, 42 and 43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No. 5,644,830). This rejection is respectfully traversed.

It is initially noted Claims 42 and 43 are herein cancelled and Claim 1 has been amended to recite in part “a cap nut made of a conductive plastic material”. Support for this amendment can be found in applicant’s originally filed specification at page 8, paragraph 21.

Neither Arnold or Ladouceur teach or suggest the further element of Applicant’s amended Claim 1 of “a cap nut made of a conductive plastic material”.

In contrast to amended Claim 1, Arnold et al. teaches a prevailing torque nut 32 formed of a conductive (non-disclosed) material.

In contrast to amended Claim 1, Ladouceur et al. teaches a plastic cap 76 provided to keep contaminants off stud portion 34 of assembly 72. See column 11, lines 55-59. Because plastic cap 76 is intended to be discarded, plastic or other inexpensive material(s) are preferred. See column 12, lines 16-21.

Neither Arnold or Ladouceur, alone or in combination, teach or suggest the further element of Applicant’s amended Claim 1 of “a cap nut made of a conductive plastic material”. The suggested modification of Arnold and Ladouceur therefore does not render Claim 1 obvious. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claim 1. Because Claims 2-12 depend from Claim 1, the suggested modification of Arnold and Ladouceur therefore does not render Claims 2-12 obvious for at least the same reasons. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 2-12.

Claims 13 and 44

Claims 13 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No. 5,644,830) and further in view of Lanham (U.S. Pat. No. 5,791,848). This rejection is respectfully traversed.

It is initially noted Claim 44 has been herein canceled and Claim 1, from which Claim 13 depends, has been amended as noted above to recite in part “a cap nut made of a conductive plastic material”.

As noted above neither of the references of Arnold or Ladouceur teach or suggest the additional element of Claim 1 of “a cap nut made of a conductive plastic material”.

In contrast to Applicant, Lanham teaches a security fastener 10 which is convertible by pushing a security cap 13 onto a conventional fastener such as a bolt 11 after the conventional fastener has been installed and does not teach or suggest the use of a conductive plastic material.

Lanham, either alone or in combination with Arnold and/or Ladouceur, therefore does not teach or suggest the further element of amended Claim 1 of “a cap nut made of a conductive plastic material”. Because Claim 13 depends directly from amended Claim 1, the suggested modification of Arnold, Ladouceur and/or Lanham therefore does not render Claim 13 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claim 13.

Claims 14 and 15

Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No. 5,644,830) and further in view of Brinkmann (U.S. Pat. No. 5,075,176). This rejection is respectfully traversed.

It is initially noted that Claim 1, from which Claims 14 and 15 depend, has been amended as noted above to recite in part “a cap nut made of a conductive plastic material”.

As noted above neither of the references of Arnold or Ladouceur teach or suggest the additional element of Claim 1 of “a cap nut made of a conductive plastic material”.

Brinkmann teaches the application of an alloy as a surface coating for common plug connectors or electrical connector pairs having sockets and plugs. Brinkmann, either alone or in combination with Arnold and/or Ladouceur, does not teach or suggest the further element of amended Claim 1 of “a cap nut made of a conductive plastic material”. Because Claims 14 and 15 depend from amended Claim 1, the suggested modification of Arnold, Ladouceur and/or Brinkmann therefore does not render Claims 14 or 15 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 14 and 15.

Claims 16-21, 29-32, 34-37 and 45-47

Claims 16-21, 29-32, 34-37 and 45-47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No. 5,644,830) and further in view of MacLean (U.S. Pat. No. 4,883,399) and yet further in view of Russel (U.S. Pat. No. 5,590,992). This rejection is respectfully traversed.

It is initially noted Claim 16 has been amended to recite in part “a conductive plastic cap having at least one embedded element”. Support for this amendment can be found in applicant’s originally filed specification at page 8, paragraph 21.

It is further initially noted Claim 35 has been amended to recite in part “a cap nut manufactured of a plastic, conductive material”. Support for this amendment can be found in applicant’s originally filed specification at page 8, paragraph 21.

It is still further initially noted Claim 45 has been amended to recite in part “a plastic material having at least one embedded conductive element”. Support for this amendment can be found in applicant’s originally filed specification at page 8, paragraph 21.

In addition to the previously discussed references, MacLean teaches a plastic encapsulated nut and washer assembly 10 which includes a retainer 50 which is not taught to have conductive properties but which is “formed of relatively rigid, somewhat resilient plastic material molded in place around the hex nut 12 to encapsulate the same.” See column 3, lines 46-48. Russel teaches away from Applicant by including a one-piece, reusable cover 20 made of a preferred resin material which is then electroplated such as by chrome plating. See column 6, lines 51-61.

MacLean and/or Russel, either alone or in combination with Arnold and/or Ladouceur, do not teach or suggest the further elements of either amended Claim 16 which recites “a conductive plastic cap having at least one embedded element”; of amended Claim 35 reciting “a cap nut manufactured of a plastic conductive material”; or of amended Claim 45 reciting “a plastic material having at least one embedded conductive element”. The suggested modification of Arnold, Ladouceur, MacLean and/or Russel therefore does not render any of amended Claims 16, 35 or 45 obvious. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 16, 35 and 45.

Because Claims 17-21, 29-32 and 34 depend from amended Claim 16, the suggested modification of Arnold, Ladouceur, MacLean and/or Russel therefore does not render Claims 17-21, 29-32 or 34 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 17-21, 29-32 and 34.

Because Claims 36 and 37 depend from amended Claim 35, the suggested modification of Arnold, Ladouceur, MacLean and/or Russel does not render Claims 36 or 37 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 36 and 37.

Because Claims 46 and 47 depend from amended Claim 45, the suggested modification of Arnold, Ladouceur, MacLean and/or Russel therefore does not render Claims 46 or 47 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 46 and 47.

Claims 25-28

Claims 25-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No. 5,644,830) and further in view of MacLean (U.S. Pat. No. 4,883,399) and yet further in view of Russel (U.S. Pat. No. 5,590,992) and in view of Yamabe et al. (U.S. Pat. No. 4,666,190). This rejection is respectfully traversed.

It is noted that Claims 25-28 depend from amended Claim 16. As noted above, Claim 16 has been amended to recite in part “a conductive plastic cap having at least one embedded element”.

In addition to the discussion above for the references of Arnold, Ladouceur, MacLean and Russel, Yamabe teaches a tube joint body 1 (of a resin material such as a polyamide) having a cap nut 3. See column 4, lines 53-66. Yamabe does not teach or suggest a conductive plastic cap or that the cap have at least one embedded element.

None of the references of Arnold, Ladouceur, MacLean, Russel or Yamabe teach or suggest the limitation of amended Claim 16 of “a conductive plastic cap having at least one embedded element”. Because Claims 25-28 depend from amended Claim 16, the suggested modification of Arnold, Ladouceur, MacLean, Russel and/or Yamabe therefore does not render Claims 25-28 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 25-28.

Claim 33

Claim 33 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No. 5,644,830), further in view of MacLean (U.S. Pat. No. 4,883,399) and yet further in view of Russel (U.S. Pat. No. 5,590,992) and in view of Janitzki (U.S. Pat. No. 5,944,465). This rejection is respectfully traversed.

Claim 33 depends from amended Claim 16. As previously noted, Claim 16 has been amended to recite in part “a conductive plastic cap having at least one embedded element”. In addition to the discussion above for each of the references of Arnold, Ladouceur, MacLean, and Russel, Janitzki teaches a bump 16 provided on a nut thread which eliminates play between the thread flanks. See column 3, lines 11-24.

None of the references of Arnold, Ladouceur, MacLean, Russel or Janitzki teach or suggest the further element of amended Claim 16 of “a conductive plastic cap having at least one embedded element”. There is no motivation to combine Janitzki with the other references to provide the further element. Because Claim 33 depends from amended Claim 16, the suggested modification of Arnold, Ladouceur, MacLean, Russel and/or Janitzki does not render Claim 33 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claim 33.

Claims 38-41

Claims 38-41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Arnold et al. (U.S. Pat. No. 5,442,133) in view of Ladouceur et al. (U.S. Pat. No.

5,644,830) and further in view of MacLean (U.S. Pat. No. 4,883,399) and yet further in view of Russel (U.S. Pat. No. 5,590,992), in view of Janitzki (U.S. Pat. No. 5,944,465) and in view of Darling (U.S. Pat. No. 4,013,110). This rejection is respectfully traversed.

Claims 38-41 depend from amended Claim 35. As noted above, Claim 35 has been amended to recite in part “a cap nut manufactured of a plastic conductive material”. In addition to the discussion above for the references of Arnold, Ladouceur, MacLean, Russel and Janitzki, Darling teaches a locking thread design for joining for example a bolt 10 and a nut 11. See column 3, lines 29-68.

None of the references of Arnold, Ladouceur, MacLean, Russel, Janitzki or Darling teach or suggest the further element of amended Claim 35 of “a cap nut manufactured of a plastic conductive material”. There is no motivation to combine Darling with the other references to provide the further element. Because Claims 38-41 depend from amended Claim 35, the suggested modification of Arnold, Ladouceur, MacLean, Russel and/or Janitzki does not render Claims 38-41 obvious for at least the same reasons and is therefore moot. The Examiner is respectfully requested to withdraw the 35 U.S.C. § 103(a) rejection of Claims 38-41.

ALLOWABLE SUBJECT MATTER

The Examiner states that claims 22-24 and 48 would be allowable if rewritten in independent form. Accordingly, Applicant has amended claims 16 and 45 to include the subject matter of Claims 22 and 48, respectively, and Claims 22 and 48 are herein canceled. Therefore, claims 16 and 45 should now be in condition for allowance. Claims 23 and 24 have been amended to agree with the elements of amended Claim 16.

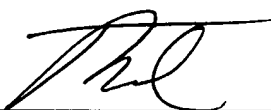
Because Claims 17-21 and 23-34 depend either directly or indirectly from Claim 16, Claims 17-21 and 23-34 should also now be in condition for allowance. Because Claims 46 and 47 depend from amended Claim 45, Claims 46 and 47 should also now be in condition for allowance.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: June 7, 2004

By: 
Monte L. Falcoff
Reg. No. 37,617
Thomas J. Krul
Reg. No. 46,842

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

MLF/TJK/cg